



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------------|------------------|
| 10/544,895 | 08/08/2005 | Kazuhiro Hattori | 124428 | 6457 |
| 25944 7590 11/15/2007 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850 | | | .EXAMINER GEORGE, PATRICIA ANN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1792 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 11/15/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/544,895

Applicant(s)

HATTORI ET AL.

Examiner

Patricia A. George

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,3-9 and 11-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/17/2005 7 8/8/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION***Election/Restrictions***

Claims 9, and 11-15 toward group II, apparatus are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/06/2007. Applicant's election with traverse of the restriction requirement in the reply filed on 9/06/2007 is acknowledged. The traversal is on the ground(s) that, the two groups, method and apparatus are toward a single inventive concept.

This is not found persuasive because examiner finds the instant invention to be obvious (i.e. no single inventive concept is claimed). See rejection below.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belser et al. (6,264,848) in view of Ichihara et al. (6,014,296), and George et al. (6,829,988), evidenced by Kawanishi (6,228,562).

Belser teaches double sided magnetic recording medium disks are known to be manufactured (i.e. the existence of manufacturing methods) for use with a set of flying heads. (See col. 5. lines 5-10). Belser also teaches the pits and grooves in the double sided magnetic recording medium disks can be defined by applying a photo sensitive mask layer on a substrate such as glass or aluminum, photo lithographically defining (i.e. a resist layer) the desired pit and groove regions and the photo sensitive layer, and etching the substrate by means such as reactive ion etching or ion milling followed by removal of the photo sensitive layer.

Kawanishi provides evidence that photo lithographically defining methods for magnetic recording medium, include continuous recording layers formed in surfaces of a substrate by a step of processing a resist layer into a predetermined pattern, a step of transferring the predetermined pattern in the resist to a mask layer, and a step of transferring the predetermine pattern in the mask to the continuous recording layer.

Belser does not teach continuous recording layers are formed which divide recording layers each formed by a number of divided recording elements.

Art Unit: 1792

Ichihara teaches continuous recording layers are formed which divide recording layers each formed by a number of divided recording elements. See summary.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the method of manufacturing double sided magnetic recording medium disks, as Belser, to include continuous recording layers are formed which divide recording layers each formed by a number of divided recording elements, as applicants' specifically claimed limitation, because Ichihara teaches such formations are known and effective for manufacturing double sided magnetic recording medium disks. In absence of unexpected results, one of ordinary skill would be motivated to attempt patterning methods for manufacturing double sided magnetic recording medium disks, of any known available formations.

Belser does not teach one of the process steps (i.e. resist pattern as in claim 3) is performed to simultaneously process both surfaces of the object (as in claim 1 and 7).

George illustrates process steps for lithographically include a resist layer into a predetermined pattern is performed simultaneously to both surfaces of an object (as in claims 1 and 3 - see figures 7-9.) to superimprint nanostructures.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the method of pattern transfer for manufacturing double sided magnetic recording medium disks, as Belser, to include any known

Art Unit: 1792

lithographic patterning steps, including processing a resist layer into a predetermined pattern performed simultaneously to both surfaces, as applicants' specifically claimed limitation, because simultaneous methods for manufacturing reduce process time, which is cost saving.

Further, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The prior art included each element claimed although not necessarily in a single reference, and one of ordinary skill in the art could have combined the elements as claimed by known patterning methods, and in combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable. Further, a predictable use of prior art elements according to their established functions to achieve a predictable result is prima facie obvious. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

Claim Rejections - 35 USC § 103

Claims 5, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belser et al. (6,264,848) , Ichihara et al. (6,014,296), and George et al. (6,829,988), as applied to claims 1 and 3 above, further in view of Kawanishi (6,228,562).

Art Unit: 1792

Belser is silent with regard to the removal of the resist before etching the continuous recording layer, as in claims 5 and 17.

Kawanishi teaches removal of the resist before etching the continuous recording layer, as in claims 5 and 17. See abstract.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the method of manufacturing double sided magnetic recording medium disks, as Belser, to include a step of the removing the resist before etching the continuous recording layer, as in applicants' limitations of claims 5 and 17, because Kawanishi teaches such method steps are known and effective for manufacturing double sided magnetic recording medium disks, and use of methods known to be effective are cost saving.

Claim Rejections - 35 USC § 103

Claims 4, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belser et al. (6,264,848) in view of Ichihara et al. (6,014,296), and George et al. (6,829,988), evidenced by Kawanishi (6,228,562), as applied to claims 1 and 3 above, in view of Swann et al. (5,472,566).

The modified invention of Kawanishi does not teach ion beam etch both sides of a substrate simultaneously.

Swann et al. (5,472,566) teaches it is known to ion beam etch both sides of a substrate. See Summary.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of pattern transferring double sided

Art Unit: 1792

magnetic recording medium disks, as Belser, to include a step of ion beam etching both sides of a substrate, as applicants' specifically claimed limitation, because Swann et al. (5,472,566) teaches such method steps are known and effective for pattern transferring. In absence of unexpected results, one of ordinary skill would be motivated to attempt patterning of any known available formations.

Claim Rejections - 35 USC § 103

Claims 6, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belser et al. (6,264,848) in view of Ichihara et al. (6,014,296), and George et al. (6,829,988), evidenced by Kawanishi (6,228,562), as applied to claims 1 and 3 above, in view of Berg et al. (3,913,520).

The modified invention of Kawanishi does not teach simultaneous deposition to both sides of a substrate.

Berg teaches the step of simultaneous deposition to both sides of a substrate.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of pattern transferring double sided magnetic recording medium disks, as Belser, to include a step of simultaneous deposition to both sides of a substrate, as applicants' specifically claimed limitation, because Berg teaches such method steps are known and effective. In absence of unexpected results, one of ordinary skill would be motivated to attempt patterning of any known available methods of deposition.

Claim Rejections - 35 USC § 103

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser et al. (6,264,848) in view of Ichihara et al. (6,014,296), and George et al. (6,829,988), evidenced by Kawanishi (6,228,562), as applied to claims 1 and 3 above, in view of Swann et al. (5,472,566), and Berg et al. (3,913,520).

The modified invention of Kawanishi does not teach ion beam etch both sides of a substrate.

Swann et al. (5,472,566) teaches it is known to ion beam etch both sides of a substrate simultaneously. See Summary.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of pattern transferring double sided magnetic recording medium disks, as Belser, to include a step of ion beam etching both sides of a substrate, as applicants' specifically claimed limitation, because Swann et al. (5,472,566) teaches such method steps are known and effective for pattern transferring. In absence of unexpected results, one of ordinary skill would be motivated to attempt patterning of any known available formations.

The modified invention of Belser does not teach simultaneous deposition to both sides of a substrate.

Berg teaches the step of simultaneous deposition to both sides of a substrate.

Art Unit: 1792

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of pattern transferring, as Belser, to include a step of simultaneous deposition to both sides of a substrate, as applicants' specifically claimed limitation, because Berg teaches such method steps are known and effective. In absence of unexpected results, one of ordinary skill would be motivated to attempt patterning of any known available methods of deposition.

Further, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The prior art included each element claimed although not necessarily in a single reference, and one of ordinary skill in the art could have combined the elements as claimed by known patterning methods, and in combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable. Further, a predictable use of prior art elements according to their established functions to achieve a predictable result is prima facie obvious. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

Art Unit: 1792


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia A. George whose telephone number is (571) 272-5955. The examiner can normally be reached on Mon. - Fri. between 8:00 am and 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN US OR CANADA) or 571-272-1000.

Patricia A George
Examiner
Art Unit 1792


PAG
11/07

NADINE NORTON
SUPERVISOR, PATENT EXAMINER

